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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689.317	10/20/2003	Max Safai	10030503-1	4136

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Kathy Manke  
Avago Technologies Limited  
4380 Ziegler Road  
Fort Collins, CO 80525

EXAMINER
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KUMAR, SRILAKSHMI K

ART UNIT	PAPER NUMBER
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2629

NOTIFICATION DATE	DELIVERY MODE
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01/28/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

avagoip@system.foundationip.com  
kathy.manke@avagotech.com  
scott.weitzel@avagotech.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/689,317	<b>Applicant(s)</b> SAFAI ET AL.	
	<b>Examiner</b> Srilakshmi K. Kumar	<b>Art Unit</b> 2629	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 November 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

The following office action is in response to request for reconsideration filed on November 2, 2007. Claims 1-15 are pending.

#### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claim 1-3, 5-8 and 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kramer (EP 0 929 028) in view of Miyasaka et al (EP 1 396 812) and further in view of Gordon et al (US 6,995,748).

With reference to **claims 1, 6 and 10**, Kramer teaches a device comprising a mobile embedded device having a cursor manipulator (19) including, a sensing surface (21) operative to sense contact by the human finger (23), that contact corresponding to applied pressure, a pressure sensor array (27) disposed on the sensing surface, wherein a measurement of the plurality of

pressure sensors corresponds to an image (see paragraphs 17-21); and an image detector, receiving images from the pressure sensor array, generating cursor manipulation corresponding to changes between the images (see paragraph 24). Kramer teaches a method for finger navigation comprising sampling (scanning) a portion, wherein the portion is a subset and the subset is a periodic selection of pressure sensors, of the array (subset being the cells which are covered by the user's finger) of an array of pressure sensors to generate a first sample (see paragraph 22); re-sampling the portion of the array to generate a second sample (see paragraph 23); and comparing the first and second samples to determine planar movement of the finger to generate directional input reflected in navigational movement of the cursor (see paragraphs 24-25).

Kramer does not teach wherein the sampling resolution of the sensing surface is based on at least one of periodically sampling alternating pixels in an array and monitoring at least one of a plurality of zones in an array, wherein the plurality of zones are evenly or unevenly distributed throughout the array, and where the plurality of zones populate the array with varying density, the plurality of zones collectively providing navigation data and wherein the sampling resolution is user selectable based on a size of a feature of a fingerprint.

Miyasaka et al disclose wherein the sampling resolution of the sensing surface is based on at least one of periodically sampling pixels in an array (paragraph 0073) and monitoring at least one of a plurality of zones in an array (Figs. 2a & 2b), wherein the plurality of zones are evenly or unevenly distributed throughout the array (Figs. 2a & 2b, paragraphs 0079-0082, 0092-0095), and where the plurality of zones populate the array with varying density (Figs. 2a & 2b), the plurality of zones collectively providing navigation data (paragraphs 0073-0075) and wherein

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the sampling resolution is user selectable based on a size of a feature of a fingerprint (0088-0092).

It would have been obvious to one of ordinary skill in the art to include the features of sampling resolution and plurality of zones as taught by Miyasaka et al into the display system of Kramer as the features of Miyasaka enable a reduction in the amount of information to be compared and thereby reducing the load of comparison processing (Miyasaka et al in paragraph 0080).

Kramer as modified by Miyasaka et al do not teach where the sampling resolution is one of periodically sampling *alternating pixels* in an array. Gordon et al teach an optical input device which captures image data to determine movement of the input. Gordon et al teach in col. 4, lines 50-56 where a single pixel is sampled periodically to detect movement, and in col. 4, lines 25-44 where more than one pixel but not all of the pixels are sampled periodically to detect movement. It would have been obvious to one of ordinary skill in the art to include the feature of not sampling all of the pixels periodically, but sample some of the pixels periodically as taught by Gordon into Kramer as modified by Miyasaka et al in order to reduce power consumption of the input device (Gordon, col. 4, lines 50-59).

With reference to **claims 2, 3, 7, and 8**, Kramer teaches that the cursor manipulation corresponds to planar directional movements and/or data entry (see paragraphs 19-20).

With reference to **claim 5**, Kramer teaches that the mobile embedded device is selected from a group comprising personal data assistants and cellular phones (see paragraph 18).

With reference to **claims 11-12**, Kramer teaches a method for finger navigation comprising sampling (scanning) a portion, wherein the portion is a subset and the subset is a

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periodic selection of pressure sensors, of the array (subset being the cells which are covered by the user's finger) of an array of pressure sensors to generate a first sample (see paragraph 22); re-sampling the portion of the array to generate a second sample (see paragraph 23); and comparing the first and second samples to determine navigational movement (see paragraphs 24-25).

With reference to **claim 14**, Kramer teaches that the region has an area comparable to a fingerprint (see paragraph 21).

With reference to **claim 15**, Kramer teaches that the subset further comprises a second region of pressure sensor (second location where user's finger is contact in the surface) (see paragraph 22-25).

4. **Claims 4 and 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kramer in view of Miyasaka et al as applied to claims 1, 6 and 10 above, and further, in view of Miller et al. (U.S. Patent No. 5,841,078).

With reference to **claims 4 and 9**, Kramer and Miyasaka et al and Gordon et al teach all that is required as explained above, and further teaches that the image detector includes a controller (35); a multiplex driver (31, 33) transceiving data from the controller; an image array (27) receiving data from the multiplex driver (see paragraphs 21-24). Kramer also teaches the usage of output logic (39) for processing the sensed data (see paragraph 24). Kramer fails to specifically teach the usage of a port transceiving data with the controller, however the examiner takes Official Notice that the usage of a port for transceiving data is well known to one skilled in the art in portable or handheld devices similar to that which is taught by Kramer (see paragraph 17). It would have been obvious to one of ordinary skill in the art at the time the invention was

made to include the port transceiving data with a controller in the prior art of Kramer as modified by Miyasaka et al and Gordon et al in order for correct connections to other peripheral devices.

Kramer as modified by Miyasaka and Gordon fail to teach the logic includes sense amplifiers, a current read access memory; a reference RAM; a predictor; a cross-correlator; and a interpolator as recited in the claims.

Miller et al. teaches the usage of sense amplifiers (32.1-32.6), connected to the image array, transceiving data from the controller (see column 7, lines 1-5); current read access memory connected to the sense amplifiers; reference RAM (38), connected to the current RAM; a predictor (40); a cross-correlator (58) receiving data from the current RAM, reference RAM, and the predictor; and a interpolator (60), receiving data from the cross-correlator, transmitting (42) data to the predictor and the controller (see Figure 2; column 7, lines 21-65)

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow the usage of components similar to that which is taught by Miller et al. to be used in the output logic contained within a device similar to that which is taught by Kramer in order to thereby provide accurate detection of the user input when operating the device.

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srilakshmi K. Kumar whose telephone number is 571 272 7769. The examiner can normally be reached on 9:00 am to 5:30 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Lefkowitz can be reached on 571 272 3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Srilakshmi K Kumar  
Examiner  
Art Unit 2629

SKK  
January 17, 2008